

## REMARKS

The enclosed is responsive to the Examiner's Office Action mailed on August 3, 2005. At the time the Examiner mailed the Office Action claims 1-14, 16, 18-27 and 29-38 were pending. Of those, claims 18-25 were withdrawn and claims 10-14 and 16 were allowed.

By way of the present response Applicants have: 1) amended claims 1, 10, 30-31, 33, 35-37; 2) added new claims 39-41; and 3) canceled withdrawn claims 18-25. Therefore, claims 1-14, 16, 26-27, and 29-41 are now pending. Applicants respectfully request reconsideration of the present application and allowance of all claims presented.

### Allowed Claims

Applicants thank the Examiner for allowing claims 10-14 and 16.

Applicants respectfully request that the Examiner amend claim 10 as indicated above to correct minor administrative errors which do not affect the scope of the claim. Applicants respectfully submit that claims 10-14 and 16 remain allowable.

### Withdrawn Claims

In this response, Applicants have canceled without prejudice withdrawn claims 18-25.

### 35 U.S.C. § 102 Rejections

The Examiner rejected claims 1-9, 26-27 and 29-38 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,168,737 to Poco et al., (hereinafter "*Poco*"). Applicants respectfully traverse.

#### *Claims 1-9 and 30-34*

Regarding independent claim 1, claim 1 includes the limitation of: "forming a layer of second material between the two substrates of the stacked device, wherein the second material

causes a reaction in a portion of the first material.” *Poco* does not disclose or suggest this limitation.

In *Poco*, the porous dielectric structures 24 are formed by immersing a mold in a precursor solution, applying a vacuum, placing a substrate 22 (such as a glass electrode plate) on top of the mold, allowing the solution to gel, and separating the substrate and the mold. (See *Poco*, col. 4, lines 19-36). In FIG. 3, a second substrate is shown on top of the already formed porous structures.

The Examiner cites *Poco*, col. 4, lines 48-64 and FIG. 3 as disclosing “forming a second layer of second material between the two substrates 22, 26 of the stacked device.” (Office Action, dated 08/03/05, p. 2). The Examiner further cites *Poco*, col. 3, lines 27-37 as disclosing “wherein the second material causes a reaction (to create the polymer foam 24) in a portion of the first material.” (Office Action, dated 08/03/2005, p. 3).

However, Applicants are unclear as to what in *Poco* the Examiner believes is the second material of claim 1. In the cited sections, *Poco* states, “the porous material is formed from a precursor solution that is dried....” (*Poco*, col. 3, lines 31-32). Elsewhere, *Poco* discloses, “The density of the final material is controlled by the concentration of the precursor solution and the drying process used (e.g., extraction of the liquid above its critical point vs. evaporation).” (*Poco*, col. 3, lines 62-65). In the cited sections, *Poco* states, “FIG. 3 shows the use of the porous dielectric structures 24 between two substrates 22,26 in an assembled field emission display.” (col. 4, lines 53-55).

*Poco* does not disclose or suggest a layer of second material between the two substrates that causes the reaction as asserted by the Examiner. Disclosure of a drying processes such as extraction of liquid or evaporation to form the porous structures 24 does not disclose “forming a

layer of second material between the two substrates of the stacked device, wherein the second material causes a reaction in a portion of the first material,” particularly when the drying process is complete before the second substrate is introduced. Therefore, Applicants respectfully submit that *Poco* does not disclose or suggest “forming a layer of second material between the two substrates of the stacked device, wherein the second material causes a reaction in a portion of the first material”.

Therefore, *Poco* does not anticipate independent claim 1 for at least the reason discussed above. Claims 2-9 depend, directly or indirectly, from claim 1. Therefore, *Poco* also does not anticipate claims 2-9 for at least the reason discussed above.

Independent claim 30 includes the limitation of “depositing a second material between the two substrates of the stacked device, wherein a reaction between the first material and the second material fills a portion of an area between the two substrates with a polymer foam as a product of the reaction.”

The Examiner cites the same sections in *Pogo* as discussed above regarding claim 1.

As suggested above, *Pogo* does not disclose or suggest a second material between the two substrates that results in a polymer foam as a product. Therefore, *Poco* does not disclose or suggest “depositing a second material between the two substrates of the stacked device, wherein a reaction between the first material and the second material fills a portion of an area between the two substrates with a polymer foam as a product of the reaction.”

Therefore, *Poco* does not anticipate independent claim 30 for at least the reason discussed above. Claims 31-34 depend, directly or indirectly, from claim 30. Therefore, *Poco* also does not anticipate claims 31-34 for at least the reason discussed above.

*Claims 26, 27, 29*

Regarding independent claim 26, claim 26 includes the limitation of: “reacting a portion of the layer of material, wherein the reaction results in the portion of the layer of material increasing in volume.” *Poco* does not disclose or suggest this limitation.

The Examiner cites *Poco*, col. 3, lines 27-37 as disclosing “reacting a portion of the layer of material, wherein the reaction (to create the polymer foam 24) results in the portion of the layer of material increasing in volume.” (Office Action, dated 08/03/2005, p. 4). However, the section cited by the Examiner states:

“The term “porous dielectric material” as used here includes microporous and mesoporous solids having open and connected pores, such as polymer foams, pre-ceramics, porous glasses, aerogels, and xerogels. The porous material is formed from a precursor solution that is dried by removing the liquid from a two-phase liquid-solid network. The network of one class of porous materials, aerogels and xerogels, is typically produced in a two-step process. The manufacture of aerogels and xerogels is well-known in the art; see U.S. Pat. Nos. 5,275,796, 5,409,683, and 5,686,031 for processes of making inorganic aerogels and xerogels.” (Poco, col. 3, lines 27-37, emphasis added).

Therefore, the cited section above suggests a *decrease* in volume, rather than an *increase* in volume, in stating that “[t]he porous material is formed from a precursor solution that is dried...” (Poco, col. 3, lines 31-32). *Poco*, in fact, explicitly discloses a *decrease* in volume in the paragraph immediately before the cited section: “The resulting mold 14 is reusable and has a pattern of cavities in the form of grooves, channels, or wells having flat or curved walls, into which the dielectric material is cast. Since the material shrinks as it forms within the mold 14,...” (*Poco*, col. 3, lines 19-22, emphasis added).

Therefore, *Poco* does not disclose or suggest the limitation of: “reacting a portion of the layer of material, wherein the reaction results in the portion of the layer of material increasing in volume.”

Therefore, *Poco* does not anticipate independent claim 26 for at least the reason discussed above. Claims 27 and 29 depend, directly or indirectly, from claim 26. Therefore, *Poco* also does not anticipate claims 27 and 29 for at least the reason discussed above.

#### *Claims 35-38*

Regarding independent claim 35, claim 35 includes the limitation of: “removing a portion of the layer of material to expose a top surface of the interconnect structure.” *Poco* does not disclose or suggest this limitation.

The Examiner cites *Poco*, col. 4, lines 48-64 and FIG. 3 as disclosing the limitation above. (Office Action, dated 08/03/2005, p. 6). However, *Pogo* states in that section: “FIG. 2D shows the resulting substrate 22 with porous structures 24 attached. Any thin film of excess porous material on the substrate can be quickly removed by chemical etching;...” (*Poco*, col. 4, lines 49-51, emphasis added). That is, *Pogo* discloses removal of excess porous material on the substrate.

*Pogo* does not disclose or suggest an interconnect structure.

Therefore, *Pogo* does not disclose or suggest the limitation of: “removing a portion of the layer of material to expose a top surface of the interconnect structure.”

Therefore, *Poco* does not anticipate independent claim 35 for at least the reason discussed above. Claims 36-38 depend from claim 35. Therefore, *Poco* also does not anticipate claims 36-38 for at least the reason discussed above.

Accordingly, Applicants respectfully request withdrawal of the rejections of claims 1-9, 26-27 and 29-38 under 35 U.S.C. § 102(b) as being anticipated by *Poco*.

### New Claims

Claims 39-41 have been added. Applicants submit that new claims 39-41 are patentable over *Pogo*.

Independent claim 39 includes the limitation of “providing a foam filling an area between the first and second wafers adjacent to the first and second conductive interconnect structures.”

First, *Pogo* does not disclose or suggest a wafer. Rather, *Pogo* discloses “a substrate, such as a faceplate or baseplate of a field emission display.” Additionally, as discussed above, *Pogo* does not disclose or suggest an interconnect structure. Therefore, *Pogo* does not disclose or suggest a conductive interconnect structure.

Accordingly, *Pogo* does not disclose or suggest “providing a foam filling an area between the first and second wafers adjacent to the first and second conductive interconnect structures.”

Therefore, *Pogo* does not anticipate claim 39 for at least the reason discussed above. Claims 40-41 depend from claim 39. Therefore, Applicants respectfully submit that claims 39-41 are also patentable over *Pogo*.

### Conclusion

Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Ms. Van N. Nguy or Mr. Michael A. Bernadicou at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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